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### **COMPANY PRESENTATION**

with excerpts from the Annual Report

2021

Note: This company presentation is an English extract of Smoltek's annual report 2021, in Swedish, which has interpretive precedence.

Company presentation



### **ABOUT SMOLTEK**

Smoltek is a global company that develops process technology and concepts for applications based on carbon nanotechnology to solve advanced materials engineering problems in several industrial sectors.

The unique technology enables manufacturing of components with smaller form factors, higher performance and lower energy supply in the semiconductor industry, where Smoltek today concentrates on developing technology for ultra-thin capacitors. Smoltek also sees great potential in the hydrogen industry, where the company today focuses on developing high-performance cell materials for electrolyzers for cheaper and more efficient hydrogen production.

Smoltek protects its unique technology through an extensive and growing patent portfolio consisting of around 100 applied for patents, of which 76 have been granted.

Smoltek's share is listed on the Spotlight Stock Market under the short name SMOL.

#### About this document

This document is based on Smoltek's regulatory annual report for 2021 (published in Swedish only). As this document was published in the fall of 2022, compared to the regulatory annual report for 2021 which was published on April 21, 2022, important events after the end of the period are included up until August 20, 2022 in the company presentation part of this document (page 4-17). This includes the CEO comment on page 8-9, and the Chairman of the Board comment on page 10, which have been updated to reflect important events after the publication of the regulatory annual report.

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### **SMOLTEK IN BRIEF**

#### **Business concept**

Smoltek specializes in the development and integration of carbon nanotechnology to solve advanced materials engineering problems in several industrial sectors. Our two business areas are Semiconductors, focusing on ultra-thin capacitors for the semiconductor industry, and Hydrogen, focusing on a high-performing cell material for electrolyzers used to produce hydrogen.

The foundation of our business idea is based on a broad, patent-protected technology platform to, among other things, very precisely grow extremely thin, conductive, carbon nanobers in various three-dimensional structures. This enables us to create films of vertical carbon nanofibers that provide a several times larger contact area, and thereby better performance, compared to a conventional flat surface.

Our business model is to license our IP and know-how for the development of process technology and application concepts, as well as to develop, manufacture and sell products based on our technology platform.

#### Vision

We aim to be a globally leading technology development partner and supplier of revolutionizing solutions for advanced materials engineering challenges within industries where the need for new disruptive technologies is sought for.

## Smoltek delivers high-performance carbon nanofiber-based solutions

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With a commercial collaboration in place with a subsidiary of Yageo, one of the world's largest capacitor providers, we are now ready to start develop, mass-produce and sell our first model of ultra-thin discrete capacitors in 2024.

#### Potential - Semiconductors

To solve challenges in the semiconductor industry, Smoltek's technology platform is being used to develop extremely thin capacitors with high electric performance, which can be placed closer to the application processor in mobile phones.

Smoltek's strategic target is to start mass production of its first ultra-thin capacitor product in 2024 together with our commercial partner, and to reach 400 MSEK in turnover for the semiconductor business area in 2027.

#### Potential - Hydrogen

To solve challenges in the global transformation to fossil-free energy, our technology is utilized to develop a high-performing cell material for PEM electrolyzers, with the aim to substantially reduce the cost of high-volume green hydrogen production.

Our company's strategic target is to scale to mass production in 2024-2026 with a commercial partner, and reach net sales of 200 MSEK in 2027 for the hydrogen business area.

136.0 MSEK

#### Cash and cash equivalents

Equity

## 71.6 MSEK

Solidity

94.8%

All of the figures above are at year end (December 31, 2020).

There is no guarantee that Smoltek will reach its strategic targets, and to do so, several challeging interim targets have to be funded and achieved along the way. See the press release published on May 5, 2022 for more information.

## THE YEAR IN BRIEF

## Proof-of-concept for cell material for electrolyzers

In November, Smoltek achieved technical-proofof-concept for our high-performing, nanofiber-based cell material for PEM-electrolyzers. The cell material fulfils several important requirements, including very low contact resistance. PEM electrolysis produces very pure hydrogen and can handle high current density and a highly variable load, making it highly suitable for intermittent energy sources.

## Development work in cell material for electrolyzers initiated

At the end of 2021, Smoltek Innovation initiated preparatory steps in a development collaboration for the company's cell material with a large industrial manufacturer of input materials for electrolyzers.

#### Håkan Persson appointed new President and CEO

During the autumn, Håkan Persson took over as the new President and CEO of Smoltek. Håkan has many years of experience from leading and developing listed technology companies and has been CEO and held leading positions in, for example, Neonode, Precise Biometrics and Scalado. He has also held several leading positions with sales and operational responsibilities within the northern European part of IBM.

## Presentation of the world's thinnest capacitor prototype

In March, Smoltek presented the world's



thinnest capacitor prototype: only a few micrometres high, barely reaching 40 micrometres in total height with the neccesary substrate. This capacitor prototype demonstrated the same high performance as previous CNF-MIM capacitors, with high energy storage capacity and low internal losses.



## Ellinor Ehrnberg appointed new CEO of Smoltek Innovation

In October 2021, Ellinor Ehrnberg assumed the position as CEO of the group company Smoltek Innovation, focusing on the business area Hydrogen (high-performing cell material for electrolyzers). Ellinor was previously business area manager, and has over 30 years of experience from leading roles, mainly within SKF but also from Husqvarna, Mölnlycke Health Care, RISE and Arthur D Little.

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new patents granted + 5 patent applications submitted

In 2021, five new patents were granted in the Semiconductors business area. Two are related to our unique capacitor technology CNF-MIM, two to the platform for packaging different semiconductor components and one for our basic technology for manufacturing nanostructures and components.

Furthermore, five patent applications were filed in the Hydrogen business area. The patent applications concern different types of manufacturing technology of cell material for electro-

lyzers, design of contact resistors and how to grow carbon nanofibers on porous substrates.



#### Continued covid-19 effect

In 2021, the company upheld several adjustments to maintain the company's operations and to create a safe working environment for the employees. The pandemic also affected the company's business contacts and market activities, while some work processes become more time-consuming in all projects.

## 22 MSEK in cash contributions in 2021

In the beginning of November, it was announced that Smoltek's TO 4 warrants were exercised to 92.6 percent. The company thereby received a total of approximately 22 MSEK before issue costs.

#### The Smoltek team continues to grow





## extended license agreements

Smoltek signed a license agreement for evaluation of the company's ultra-thin capacitors with a global manufacturer of passive electronic components, including capacitors, in the spring of 2020. In 2021, this collaboration was extended and deepened twice with increased focus on commercialization.



## SIGNIFICANT EVENTS IN 2022 (UP UNTIL AUGUST)

#### Updated strategic objectives

In May 2022, Smoltek clarified and updated the company's strategic objectives, with continued focus on industrialization and commercialization of the group's two business areas: Semiconductors (ultra-thin capacitors) and Hydrogen (high-performing cell material for electrolyzers).

The company aims to reach volume production for the ultra-thin capacitors in 2024, and to scale up the cell material technology for electrolyzers to volume production in 2024-2026.

#### Order of industrial carbon growth machine

In March 2022, the group company Smoltek Semi ordered an industrial machine for manufacturing of carbon nanofibers to the ultra-thin CNF-MIM capacitors. The machine, which will be installed at a foundry, constitutes a central part of the production process being established by Smoltek and its commercial partner.

## Collaboration agreement with large manufacturer of electrolyzer material

In May 2022, the group company Smoltek Innovation signed a collaboration agreement with a large manufacturer of input material for electrolyzers. The collaboration includes development of demonstrators for Smoltek's highly efficient nanofiber-based cell material into a complete PEM electrolyzer cell.

#### Commercial agreements signed with Yageo Group for Smoltek's ultra-thin capacitors

In June 2022, Smoltek Semi signed a Memorandum of Understanding (MoU) with a subsidiary of YAGEO Group, a global manufacturer of capacitors, for discrete ultra-thin CMF-MIM capacitors and, provided that the development goals are achieved, mass production and sales via a 50/50-owned joint venture. This was followed by the signing of a Joint Development Agreement (JDA) in August 2022.

## Proof-of-concept study for global medtech company

In July 2022, the company received an order to perform a proof-of-concept study using the carbon nanofiber technology to help solve a difficult materials engineering problem for a global medtech company.



## A COMMENT FROM THE CEO, HÅKAN PERSSON

Dear Shareholder, 2021 was characterized by an intensive to industrialize and commercialize our two product areas: ultra-thin capacitors for the semiconductor industry and high-performing cell material for electrolyzers in the hydrogen industry. At the same time, we have continued to develop and strengthen the company's organization with relevant experience and expertise to be able to handle the increased demands from our industrialization processes. A large part of our business is conducted in collaborations, and it is inspiring to see that our partners share our strong belief in Smoltek's unique technology platform and the products we aim to take to market.

## Ultra-thin capacitors – Strong progress with a global commercial partner

In the product area for ultra-thin capacitors, we have taken further important steps in creating a complete process for high-volume production with a focus on the first product, decoupling capacitors for application processors in mobile phones. This includes an order for an industrial machine for large-scale production of carbon nanofibers which will later on be installed at a contract manufacturer (foundry). At the same time, we have started the design phase of our first product together with a contract manufacturer, which is phase three of five before the production process is completed and we can initiate high-volume production. In parallel with this work, our evaluation collaboration with a global manufacturer of passive electronic

#### components continued.

After the end of the year, In June/August 2022, we took an important next step in this collaboration by signing a Memorandum of Understanding (MoU), followed by a Joint Development Agreement (JDA), with a subsidiary of Yageo Group, a global electronic component company with strong manufacturing and sales presence through its 45,000 employees worldwide. Together with Yageo, we will develop, mass produce and sell ultrathin discrete capacitors based on our CNF-MIM technology, utilising Yageo's global network. This is a milestone of great importance for Smoltek as a company, constituting both a strong commercial validation of our technology platform and a clear path to market for our ultra-thin capacitors, including co-financing

and access to extensive volume manufacturing experience from this world-class partner.

#### Cell material for electrolyzers – Proof-ofconcept and industrial collaboration

In our product area for high-performing cell material for PEM electrolyzers used in green hydrogen production, we achieved proof-ofconcept in 2021. This means that we have demonstrated in a laboratory environment that the cell material fulfils several important parameters, including very low contact resistance. At the end of 2021, preparatory steps were also initiated in a development collaboration with a large industrial manufacturer of materials for electrolyzers. The goal is for this development work to be followed by a collaboration for prototype production with a large manufacturer of electrolyzers or components for electrolyzers, which we aim to sign this year, or no later than in 2023.

#### Reinforcements at leading positions

A company is never stronger than the team that drives it forward, and it is therefore inspiring that Smoltek continues to attract people with solid, relevant experience and expertise. In 2021, I myself took over as President and CEO in October, and I contribute with my experience from similar roles in other listed technology companies such as Neonode, Precise Biometrics and Scalado. During the year, Ellinor Ehrnberg also took over as CEO of the Group company Smoltek Innovation. In the beginning of 2022, we were able to recruit Farzan Ghavanini, most recently from the position of Director, New Technology Development at Fingerprint Cards, as new CTO for Smoltek.

#### Financing and looking ahead

Smoltek's financial position was further strengthened during the fourth quarter of 2021, when the TO 4 series warrants were exercised to 92.6 percent, which provided the company with approximately 22 MSEK. This means that we can now maintain a continued high pace in our industrialization and commercialization processes.

I look forward with great confidence to the rest of 2022 and the coming years for Smoltek as they will be intensive and exciting. In my opinion, we are in an excellent position to succeed in completing our production processes as well as taking the first products to market within both our business areas. In 2022, we will lay the foundation for the technological development, from which we can then expand. These are complicated processes that take time, but we are well on our way. When we succeed in this, Smoltek will have developed into an innovative industrial supplier in two very large and growing global markets with potential to create significant value for our shareholders.

#### Håkan Persson

President and CEO of Smoltek Nanotech Holding

#### "

I look forward with great confidence to the rest of 2022 and the coming years for Smoltek as they will be intensive and exciting. In my opinion, we are in an excellent position to succeed in completing our production processes as well as taking the first products to market within both our business areas.

### A COMMENT FROM THE CHAIRMAN OF THE BOARD, PETER AUGUSTSSON

Dear investors, In 2021, work within the Group has continued in a satisfactory manner with the development of Smoltek from an innovation company to an innovation-driven industrial company. This process is based on a structure for refining business opportunities and customer value based on the company's unique patent portfolio.

The goal is to establish Smoltek over time in very large and growing global markets: mobile semiconductor-based applications (including smartphones) and the production of fossil-free hydrogen. Even though our technology platform has a much broader potential than that, it is crucial that we now focus and take the company to market in an effective way, in order to subsequently broaden our offering.

An important part of our ongoing processes is to gradually strengthen Smoltek's organization and competence profile so that we can always manage the challenges we face. We have taken big steps forward in 2021 with the recruitment of Håkan Persson as new President and CEO, Ellinor Ehrnberg as CEO of the Group company Smoltek Innovation and the recruitment of Farzan Ghavanini as the new CTO. All three have solid relevant experience of successful work in similar positions. The ongoing reinforcements that have been implemented within, for example, our Group company Smoltek Semi also bode well for the future.

#### Collaborations for Smoltek going forward

I would also like to highlight the various collaborations that we are involved in within our two business areas. These collaborations range from research and development to industrialization and commercialization, and they enable Smoltek to conduct extensive work in these areas despite the fact that we are still a small company with limited resources. It is also an excellent testament of our technology platform that, for example, a large manufacturer of capacitors invests significant time and energy in evaluating our technology and collaborating



with us on the way towards commercialization. I am delighted that this collaboration progressed into a Memorandum of Understanding (MoU), followed by a Joint Development Agreement (JDA), with a subsidiary of the YAGEO Group, a global electronics components provider, in June-August 2022. YAGEO is a perfect commercial partner for us in this business area, with the mass production experience and worldwide sales network that we need to become commercially succesful with our CNF-MIM technology.

In 2022 and beyond, I and the rest of the board see good opportunities for Smoltek to continue to make concrete progress on the way to market with our ultra-thin capacitors at the forefront. By demonstrating the company's strength in this way, we can hopefully begin to highlight the significant values we have built in our technology platform, as well as the values we create within our two business areas, in a much more concrete way than today.

## THE POSSIBILITIES OF THE TECHNOLOGY PLATFORM

Smoltek's patent protected technology platform enables controlled growth of precisely localized and defined conductive nanostructures; as individual fibers, or in predetermined clusters or films. This is done through catalytic growth, with materials and at temperatures compatible which are compatible with industrial requirements.

By being able to precisely grow extremely thin carbon nanobers in different three-dimensional structures, we are able to effectively multiply the actual performance on a given surface that can be coated with different types of materials. This could revolutionize material development within, for example, industry segments for semiconductors and energy conversion.

## Possibilities for semiconductors (capacitors)

To solve challenges in the semiconductor industry, we are developing extremely thin



capacitors with high electrical performance, which can be placed closer to the active circuit in, for example, an application processor.

#### Possibilities for hydrogen (electrolysers)

In order to solve challenges during the global energy transition, we are developing a high-performing cell material, which could contribute to more efficient electrolysers for the production of fossil-free hydrogen.



## THE FUTURE POTENTIAL OF THE TECHNOLOGY PLATFORM

Our unique and patent-protected technology platform has great potential also outside of the company's currently prioritized areas (capacitors and cell material for electrolysers).

In the semiconductor industry, it could enable the manufacturing of smaller and more energysmart circuits for other application areas that require smaller form factors, higher performance and lower energy consumption.

We also see that the technology could enable improved performance compared to today's technology in other membrane-based applications in the future, within energy conversion and energy storage. One such area is (Li-ion) solidstate batteries that could offer higher energy density, extended charging capacity, better temperature performance and reduced flammability compared to today's batteries.

Another area where we see that there may be a future opportunity for our technology is medical technology, or biotechnology. Here, we see the potential to create refined bioelectrodes which could that provide better interfaces and resolution for research of cells and tissues compared to current technology in this space. These could, for example, provide very thin implantable electrodes that can be used to better listen to the communication between nerve cells in the brain, or reduce inammation risks for implants, fixtures or prostheses, by creating significantly improved interfaces between the organic tissue and the "hardware", where 65% of healthcare-related infections occur today.

Apart from activities funded in part or full by partners or customers, such as the ongoing



proof-of-concept study for a global medtech company, we are not investing actively in these areas at the moment. They are instead considered to be attractive future opportunities for our technology platform.

### **BUSINESS AREA: SEMICONDUCTORS**

Since the company was founded, Smoltek has developed various application concepts to solve the challenges that the semiconductor industry is facing today. The technology concepts are based on being able to create smarter integration by enabling the manufacturing of smaller and more efficient circuits. Our CNF-MIM capacitors offers an unique solution thanks to its extremely low profile height.

Our strategy is to initially commercialize the CNF-MIM technology (carbon nanober-based capacitors). Here, the technology platform with vertical carbon nanobers (CNFs) creates a significantly larger effective surface through the unique, three-dimensional effect, compared to the two-dimensional surface used in conventional capacitors. A large effective surface in relation to a minimal physical "footprint" is central in a capacitor design.

## The challenge in the semiconductor industry

The semiconductor industry faces a major challenge with the growing use of new technologies such as 5G, AI and IoT – which require the development of new highly integrated technology with greatly improved computing performance and greater storage capacity in a smaller physical format. Here, our patent-protected technology can offer what the semiconductor and circuit packaging industries need – compact and complex 2.5D and 3D architectures, to meet today's and tomorrow's challenges.

The key to optimization for semiconductors lies in what is called advanced circuit packaging or heterogeneous integration – which in practice means smaller, tailored, component architectures optimized for specic product and application areas. In these architectures, capacitors, among other things, play a crucial role. And here our capacitor technology CNF-MIM, with its extremely low profile height, can provide direct performance benefits.

Our pioneering technology for miniaturized capacitors is very well positioned for the market's needs, both for the manufacturing of ultra-thin, stand-alone (discrete) capacitors for integration in the packaging process and for more efficient capacitors in direct integration, or embedding, already in the industrial CMOS process.

#### Development of the CNF-MIM technology

In March 2021, we demonstrated a prototype of the world's thinnest capacitor – a CNF-MIM capacitor with a total height of just under 40 micrometers (including the component's necessary support substrate!), while sustaining the high additional performance of previous CNF-MIM capacitors.

Another important parameter in the semiconductor industry is the survival rate of the components in various harsh environments, as well as expected lifetime. In parallel with the ongoing evaluation license project, our R&D team was able to further improve the reliability of the CNF-MIM technology by more than halving the failure rate of the capacitor samples.

#### Development of the business area

Within this business area, Smoltek is collaborating with a subsidiary of Yageo Group, a major global manufacturer of passive electronic components, with the aim of commercial production of discrete ultra-thin capacitors. Since spring 2021, we have also worked on the industrialization of our capacitor technology. After positive technical progress in the concept phase, the project transitioned during the autumn into a design phase, where basic evaluation of the technology is now being carried out. The design phase constitutes phase three of five before mass production can begin and, if the outcome is favorable, will lead to an engineering phase where the process steps are optimized and approved for high-volume production. The final step before mass production can begin is to approve the actual product(s) being manufactured by subjecting it/them to a number of well-defined qualification tests. The goal is to complete the manufacturing process together with the custom-made industrial carbon plant machine in collaboration with a contract manufacturer. Then we achieve a finished manufacturing process that can be used for several capacitor products.

This work is carried out in the wholly owned group company Smoltek Semi AB.

#### "The single most important question for semiconductor packages for mobile phones is: How thin can we make it?"

The quote comes from Christian Hoffmann, Principal Engineer at Qualcomm. The statement was made at the IMAPS Device Packaging Conference in Phoenix, Arizona, on March 3, 2020. Put in context, this means that the continued miniaturization of semiconductor packages needs much thinner capacitors compared to what today's conventional technology can handle.

## Profile height for today's capacitor techniques

The profile height is something that is becoming increasingly important for future circuit integrated capacitors. Smoltek's solution occupies only a fraction of the volume compared to today's conventional capacitors.



## CNF-MIM I The world's thinnest capacitor presented in March, 2021

In March, 2021, Smoltek presented a prototype CNF-MIM capacitor with a total height of just below 40  $\mu$ m, making it the world's thinnest capacitor. At the same time, the capacitor delivered a capacitance density of 500 nF/mm<sup>2</sup> (nanofarad per square millimeter), an equivalent series resistance below 10 m $\Omega$  (milliohm) and an internal inductance below 15 pH (picohenry).



## **BUSINESS AREA: HYDROGEN**

Smoltek's patent-protected nanotechnology has great potential to contribute to enabling more efficient production of fossil-free hydrogen by developing a new cell material as a carrier for catalytic nanoparticles in electrolyzers. By being able to improve the surface performance in the boundary layer between membranes, flow plates and electrodes in today's electrolyzer cells, these can become two to three times more surface efficient, which could result in both cheaper electrolyzers and increased hydrogen production.

As investments in carbon dioxide-free hydrogen production increase avalanche-like, today's PEM electrolyzers need to become cheaper to build and operate, in order to reduce the cost of the enormous amounts of green hydrogen that are planned to be produced globally. For this to be possible, the hydrogen plants need to use, among other things, a signicantly smaller amount of expensive and critical catalyst particles. This mainly applies to iridium - an extremely expensive precious metal that today costs around SEK 2 million / kg.

For example, it is expected that large amounts of the green hydrogen of the future will be produced from electricity from offshore wind power. A typical such wind farm can have an output of 30 MW (megawatts), which with today's electrolyzer technology requires 18 kg of iridium – at a cost of SEK 36 million.

## Nanofibers can provide smaller and cheaper electrolysers

In today's electrolyzers, the extremely expensive

catalyst particles are encapsulated in an ink, which means that the largest proportion of them are not in direct contact with the membrane. Thus, signicantly larger amounts of iridium are needed than necessary in the electrolyzers. Smoltek's nanober-based cell materials, on the other hand, create a three-dimensional structure that allows the iridium particles to be placed on the surface of our nanobers instead of being encapsulated. In this way, in principle, all particles come into contact with the membrane and the result is that the number of iridium particles can be reduced by 80% - or more.

Another effect of Smoltek's cell material is that the current density in the electrolyzer increases, and thus the capacity per cell increases. This is done by the three-dimensional structure allowing the iridium particles to be packed 2-3 times more tightly, and the uneven, "thorny" structure means that the membrane is "penetrated" by iridium. All in all, this means a 2-3 times lower investment cost for the electrolyzer in a hydrogen plant, at the same time as operating and maintenance costs will also be lower, thanks to the electrolyzer being able to decrease in size. The investment,



alone in the electrolyzer itself for a 30 MW (megawatt) wind farm could be reduced from SEK 900 to 300 million.

This work is carried out in the wholly owned group company Smoltek Innovation AB.

#### Business area development

In 2021, Smoltek completed the technical Proofof-Concept for cell components based on the company's basic IP platform for the production of carbon nanobers, with specic additions for intellectual property protection in the electrolyzer technology.

We also started a development collaboration with a large-scale manufacturer of input material for electrolyzer cells. During the spring, we published a whitepaper on the company's electrolyzer technology, which gives potential customers and partners an increased understanding of the technology's possibilities.

We are currently working on completing the development of the cell material, which will take place in partnership with one or more major players on the electrolyzer market as well as in collaboration with international research groups. This includes building demonstrators together with a large industrial manufacturer of materials for electrolyzers. Going forward, a production process for large-scale production of the cell material will also be developed and completed. This will also ensure possible adaptation of the cell material, according to the wishes of different partners and customers and the design of their PEM electrolysers, followed by a gradual scaling up of the production volume.

## More efficient electrolysers enable significant savings

As an example of the potential for future hydrogen production, LKAB expects to install electrolysers with a total production capacity of as much as 9-10 GW to ensure the conversion of its mining operations and processing of iron ore for the steel industry to a fossil-free production. In this case there is an opportunity to make huge cost savings compared to using conventional electrolyzers.

The same applies to the newly started H2 Green Steel in Boden, a company that plans to build a large-scale plant for fossil-free steel production based on hydrogen that is expected to produce 5 million tonnes of fossil-free steel by 2030.

## How hydrogen is formed - the PEM method





### **MARKET POTENTIAL AND STRATEGY**

Smoltek sees great potential for the company's patent-protected technology platform in several industrial sectors. Through precision manufacturing of extremely thin, conductive, carbon nanofibers in various three-dimensional structures, our technology creates fifilms of vertical carbon nanofibers that provide a several times larger contact area, and thereby better performance, compared to a conventional flat surface.

Our overall strategy is to first establish the company commercially in the billion market for capacitor components in the semiconductor industry. This through licensing of IP and production and sales of ultra-thin capacitors based on the company's unique CNF-MIM technology.

The technology enables the production of miniaturized capacitors which are suitable for architectures within high-performance semiconductor circuits, for example, application processors for mobile phones, and other high-performance processors. Through our commercial agreements with a subsidiary of the Yageo Group, a global manufacturer of passive electronic components including capacitors, we have taken a crucial step towards commercialization and mass production in this business area.

In the market for hydrogen, we are as a first step focusing on the production of new cell materials to electrolyzers used in fossil-free hydrogen production. The new cell material can contribute to the production of electrolyzers becoming considerably cheaper by making full use of the extremely expensive catalyst particles needed for the process. In addition, the same performance can be obtained from an electrolyzer of a much smaller size.



Completed

### **UPDATED STRATEGIC OBJECTIVES**

In May 2022, Smoltek presented updated strategic objectives for the company up until 2027. If these objectives are reached, the company expects to then scale its business considerably in the following years by adding additional products and business areas.

#### Business area Semiconductors: Ultrathin capacitors for the semiconductor industry

- Annual sales for landside capacitors (for mobile application processors) of approximately 400 MSEK, which corresponds to a market share of approximately 20%.
- Development / qualification / launch of more products (embedded capacitors etc.) in the semiconductor industry.

#### Business area Hydrogen: High-performing cell material for PEM electrolyzers

- Annual sales of approximately 200 MSEK, which corresponds to a market share of approximately 3-4% (for the anode side).
- Development / qualification of additional related products / applications for example fuel cells.

#### Additional business areas

• Conceptualization and patent protection in additional markets.

#### Roadmap to reach volume production



There is no guarantee that Smoltek will reach its strategic objectives, and to do so, several challeging interim targets have to be funded and achieved along the way. See the press release published on May 5, 2022 for more information.

## **BOARD OF DIRECTORS & CEO**



#### PETER AUGUSTSSON

#### Chairman

Peter has over 40 years of experience from automotive, technology and component companies, including leading positions within Volvo Cars

and as CEO of SKF and Saab Automobile. Education: MSc in engineering Holding: 52,401 (through holding company) Warrants: 80,000



#### **FINN GRAMNAES**

#### Member of the board

Finn has extensive experience in building companies in Sweden and the US within several technology areas. Finn is, among other things, CEO of

the development company Gramtec Innovation and the investment company Gramtec Business Partner.

Education: Mechanical engineering

Holding: 1,790,072 (through holding company) +11,549 (privately)

Warrants: -



#### **BO HEDFORS**

#### Member of the board

Bo has over 50 years of experience in the global telecommunications market. Bo was previously CEO of Ericsson in Dallas and

vice president of Motorola in Chicago. He is currently an advisor to Trice Imaging, Nexit Ventures and CloudBackend.

Education: MSc in engineering, CTH Gothenburg Holding: 75,150

Warrants: -



#### PETER ENOKSSON

#### Member of the board

Peter is a professor at Chalmers University of Technology in Gothenburg and has over 20 years of

research experience in carbon-based nanotechnology and more than 30 years of experience in microsystem technology.

Education: MSc in engineering physics, PhD, Associate Professor, KTH Stockholm Holding: 1,109,030

Warrants: -



#### **GUSTAV BRISMARK**

#### Member of the board

Gustav has over 30 years of experience in patent and licensing issues and commercialization of new

technology from various positions within Ericsson, most recently as Head of Intellectual Property Rights.

Education: MSc in engineering physics, Uppsala University Holding: 3,409 Warrants: 40,300



### HÅKAN PERSON

CEO

Håkan is an experienced CEO with previous positions at several listed technology companies, including

Neonode, Precise Biometrics and Scalado. He was most recently SVP Sales & Strategy at the biometrics company Next Biometrics.

Education: Bachelor's Degree in Business Administration

Holding: 50,000 Warrants: 50,000

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### SENIOR EXECUTIVES



#### **OLA TIVERMAN**

#### CEO Smoltek Semi and Revenue Manager

Ola has extensive experience in sales and market activities for new technology in several global high-tech companies,

as product manager as well as development manager and CEO.

Education: Data and electronics engineer, University of Skövde

Holding: 90,654 (through holding company) Warrants: 16,000



#### **ELLINOR EHRNBERG**

#### **CEO Smoltek Innovation**

Ellinor has over 30 years of experience in innovation, business development, strategy, company acquisi-

tions, research, sales and company management, primarily from SKF and also Husqvarna, Mölnlycke Health Care, RISE and Arthur D Little.

Education: MSc in engineering, industrial economy, CTH Gothenburg etc

Holding: 4,000

Warrants: 4,000



#### FARZAN GHAVANINI

#### СТО

Farzan has solid experience from leading positions in technology development and industrialization of nanotechnology. Farzan has most

recently had a role as head of development of new technology at Fingerprint Cards.

Education: PhD, Nanotechnology, CTH Gothenburg

Holding: -

Warrants: -



#### KARL LUNDAHL

#### **VP Product Manager**

Karl has over 15 years of experience in applied research and development in the electronics and semiconductor

industry. Karl also has experience of scaling up prototype production to production in very high volumes.

Education: MSc in chemical engineering, CTH Gothenburg

Holding: -Warrants: 4,090



#### PIA TEGBORG

#### CFO

Through previous management positions, Pia has a solid experience of running finance and finance functions in, for example, growth companies.

Pia also has extensive experience in strategic communication.

Education: MSc in economics, The Gothenburg School of Business, Economics and Law Holding: -Warrants: 4,000



#### ZLATAN MITROVIC

Auditor

Zlatan is an authorized accountant at Grant Thornton Sweden AB.

He has been the auditor for Smoltek Nanotech Holding AB since 2016.

### DIRECTORS' REPORT

The Board of Directors and the CEO of Smoltek Nanotech Holding AB (publ), corporate identity number 559020-2262, based in Gothenburg, hereby submit their annual accounts and consolidated accounts for the financial year 2021.

Amounts in the annual report are stated in SEK. All amounts are stated in SEK, unless otherwise stated.

#### Summary of the year

In mid-March, Smoltek announced that the company has developed a prototype of the world's thinnest capacitor. The prototype is a CNF-MIM capacitor that is only a few micrometres high, and together with the necessary substrate it barely reaches 40 micrometres in total height. At the same time, the capacitor prototype demonstrated the same high performance as previous CNF-MIM capacitors, with high energy storage capacity and low internal losses for the component.

In late March, the company announced that the evaluation license agreement that was signed

in March 2020 with one of the world's largest capacitor manufacturers will not be renewed, and that the underlying evaluation project has been completed. The capacitor manufacturer will continue on its own to develop an alternative process for part of the production chain outside of Smoltek's technology platform. The manufacturer sees potential to further increase its attractiveness through the CNF-MIM technology and the company is therefore optimistic about resuming the collaboration once the manufacturer's work has progressed further. The parties will continue to have a dialogue about other potential opportunities to commercialize Smoltek's CNF-MIM technology.

On March 19, the company announced that Anders Johansson and the board of directors in Smoltek Nanotech Holding AB jointly decided to conduct a change of CEO in the company. Marie Landfors was appointed as interim CEO while a recruitment process for the permanent CEO role was initiated.

During the first quarter, the announced project within the framework of Vinnova's program "Smarter electronic systems" was completed according to plan. Through this project, Smoltek gained useful experiences and broadened its network of contacts within the existing customer base for the CNF-MIM technology – most



importantly through developed contacts with high-volume manufacturers of CVD systems, contract manufacturers and potential customers.

In mid-April, the company announced that the license agreement that was signed in with a global manufacturer of electronic components for its technical and commercial evaluation of Smoltek's CNF-MIM capacitor technology in April 2020, was further extended until the end of August 2021.

In the beginning of May, Smoltek announced that the company has recruited Martin Lenart as a part-time operative advisor.

In mid-May, the company published an operational update on its ongoing activities within industrialization and new innovation areas as well as the work to complete proof-of-concept for Smoltek's new high-performing cell material for electrolyzers in line with the direction set forth in connection with the directed issue of 80 MSEK that was conducted in October 2020. The update also included information on the implementation of a supply chain and related production processes for Smoltek's ultra-thin capacitors.

Smoltek's Annual General Meeting was held on May 27, 2021 and was conducted only by postal vote without physical participation as a result of the ongoing corona pandemic. The Annual General Meeting resolved, in accordance with the nomination committee's proposal, to reelect Board members Peter Augustsson, Peter Enoksson, Finn Gramnaes, Bo Hedfors and Gustav Brismark. Peter Augustsson was re-elected Chairman of the Board. The AGM also resolved to issue warrants to certain key persons and board members in the company and to introduce incentive programs for future key persons.

In late June, the company published a white paper on the company's technology to make electrolyzers more effective, based on Smoltek's patent-protected technology platform for carbon nanofibers. The aim is to provide the technology for manufacturers of industrial hydrogen plants ready for the production of fossil-free hydrogen.

In the second quarter, the company contracted Anders Stänkelström as Project Manager Sourcing to lead the work to identify manufacturers in the supply chain for the production of the company's ultra-thin capacitors. In July, Håkan Persson was recruited as the new President and CEO with effect from October 1.

In late August, Smoltek announced that it has appointed Ellinor Ehrnberg as President of Smoltek Innovation AB, and she assumed this position on October 1. Ellinor has previously held the position of business area manager of Smoltek Innovation, and she has also been a part of Smoltek's management team.

In late August, Smoltek announced that the license agreement signed with a global manufacturer of electronic components for its technical and commercial evaluation of Smoltek's capacitor technology, would be further extended to the end of 2021. With satisfactory progress achieved when it comes to validating the performance of the CNF-MIM technology, the project is now moving into a new phase with a stronger focus on commercial production aspects such as reliability, manufacturability and production cost.

In late September, Smoltek announced that the company has made changes in the management team. Board member and Smoltek's co-founder Peter Enoksson took over as acting chief technology officer (CTO). The company has also initiated the recruitment of a new permanent CTO with a more business-oriented focus.

In late September, Smoltek published an operational update stating that the current goal for the wholly owned group company Smoltek Semi is to focus on developing an industrial process for mass production of discrete CNF-MIM capacitors at contract manufacturers (foundry), including the procurement of a specially designed machine for largescale production of carbon nanofibers, which will be placed at the foundry. During the period, the industrialization process for the company's discrete CNF-MIM capacitors has also moved from concept phase to design phase, in collaboration with a contract manufacturer.

The design phase, in which the components to be manufactured are designed, constitutes phase three of five before mass production can begin. The company also announced that the potential customer base of companies that may be interested in mass-producing discrete CNF-MIM capacitors consists of a small number of very large players. These include the licensee in Smoltek's ongoing evaluation collaboration.

The goal is to secure one or several customer agreements with the aim of utilizing the developed production process for high-volume production of discrete CNF-MIM capacitors.

During the third quarter, the company announced further improvements in the performance of the CNF-MIM technology. For example, the company recently attracted great interest and received a mention for best presentation at the international PCNS-conference in Milan, which is an important European event for the capacitor industry.

During the third quarter, Smoltek has installed two new equipment systems for enhancing the R&D work. This will give the company long-term benefits with increased opportunities of technology development and cost efficiency. For example, the company has invested in a new CVD-system (chemical vapor deposition) for more effective and versatile growth of carbon nanostructures in the MC2-lab at Chalmers.

In the beginning of October, Smoltek published an operational update was published on the business area for high-performing cell material for electrolyzers used in fossil-free hydrogen production. The pre-study that was initiated in the spring had then been expanded from focusing on patent applications to include various methods for corrosion protection, as Smoltek has shifted its focus to the anode side of the electrolyzer, where a low pH value provides an aggressive environment. The technical results and performance obtained so far have been positive.

In parallel with this, the company is working with industrialization by developing a complete concept around large-scale production of the company's cell material. A central part of the industrialization process will be to specify a production equipment for large-scale production of carbon nanofibers. Several potential suppliers of such machines have already been identified, partly in collaboration with Smoltek Semi.

In the beginning of November, the company announced the outcome of the exercise of warrants of series TO 4, which were issued during the fourth quarter of 2020. In total, 1,168,078 warrants of series TO 4 were exercised, corresponding to approximately 92.6 percent of the total number of outstanding warrants of series TO 4, for subscription of 1,168,078 shares at a subscription price of SEK 18.82 per share. Smoltek will receive approximately SEK 22.0 million before issue



costs through the exercise of the warrants of series TO 4.

In the beginning of December, Smoltek announced that Lena Olving, Marie Landfors and David Pettersson were proposed as members of the Nomination Committee for Smoltek's Annual General Meeting 2022 by the three largest owners Gramtec Business Partner AB, Peter Enoksson and Kaj Holmberg.

At the end of the year, preparatory steps were initiated in a development collaboration concerning Smoltek's cell material with a large industrial manufacturer of materials for electrolyzers.

On December 20, 2021, an Extraordinary General Meeting was held in Smoltek Nanotech Holding AB. The Annual General Meeting resolved, in accordance with the Board's proposal, on a directed issue of warrants to the CEO. The Annual General Meeting further resolved, in accordance with a proposal from Gramtec Business Partner AB and Peter Enoksson, on a directed issue of warrants to the Chairman of the Board. The Annual General Meeting also resolved, in accordance with a proposal from Gramtec Business Partner AB, Peter Enoksson and Kaj Holmberg, to adjust the principles for the Nomination Committee, which were adopted at the Annual General Meeting on May 27, 2021.

Smoltek's collaboration with DC Advisory, a leading global financial advisor with expertise in industrial transactions, continued during the year. DC Advisory's wide network in both the semiconductor and electronics industries, as well as in other industrial segments has contributed to an increased global presence for Smoltek and opened opportunities through strategic relationships in existing as well as new application areas and industries.

#### Research & Development

Smoltek demonstrated continued advances in the company's two business areas: ultra-thin capacitors for application processors and high-performing cell material for PEM-electrolyzers in 2021.

In March, Smoltek presented a prototype of the world's thinnest capacitor which is only a few micrometres high. Together with the necessary

substrate it barely reaches 40 micrometres in total height. At the same time, the capacitor prototype demonstrated the same high performance as previous CNF-MIM capacitors, with high energy storage capacity and low internal losses for the component.

The capacitors' survival rate in various harsh environments as well as their expected lifetime are important parameters in the development of new commercial technology in semiconductors. Within the framework of the ongoing evaluation license project with a large capacitor manufacturer, Smolteks R&D team has improved the reliability of the CNF-MIM technology significantly as the failure rate has been more than halved.

A whitepaper on the company's technology within the business area for energy storage was published in June. The elaborated report describes how it is possible to make electrolyzers more effective, based on Smoltek's patent-protected technology platform for carbon nanofibers.

Proof-of-concept for Smoltek's high-performing, nanofiber-based cell material for PEM-electrolyzers was achieved in November. This means that the company has demonstrated in a laboratory environment that the cell material fulfils several important performance and durability requirements, including very low contact resistance.

Work on Smoltek's IP development has progressed and during the year five new patents were granted in the semiconductor business area. Two of these are related to our unique capacitor technology CNF-MIM, two are related to the platform for packaging different semiconductor components and one is for our basic technology for manufacturing nanostructures and components.

During the year, we also filed five patent applications in the business area for energy conversion. The patent applications concern different types of manufacturing technology of cell material for electrolyzers, design of contact resistors and protection for our white paper.

#### Parent company operations

The object of the company's operations is to, on its own or through group companies, develop

technology and intellectual property rights in the nanotechnology area for licensing to the electronics and semiconductor industries, and compatible activities.

#### After the year-end

In January, it was announced that the company has recruited Farzan Ghavanini, with solid experience from leading positions in technology development at innovative companies and a research background in nanotechnology, for the position as the company's new Chief Technology Officer (CTO). He will assume the position on April 1, 2022.

In January, Smoltek's CEO Håkan Persson also purchased 50,000 shares in the company, of which 30,000 from Gramtec Business Partner AB and 20,000 from Peter Enoksson. The transaction was completed on January 20, 2022, at a price of SEK 27.10 per share and the total purchase price amounted to around SEK 1,35 million.

In the beginning of March, the evaluation agreement that the company signed in April

2020 with a large manufacturer of electronic components for the semiconductor industry was extended further until the end of April 2022.

In March, Smoltek also published an operational update on the development of the company's nanofiber-based cell material for electrolyzers where the company announced that the aim is to sign a collaboration agreement with a manufacturer of electrolyzers, or components for electrolyzers, in order to be able to start manufacturing small-scale prototypes in 2023 or sooner.

On March 21, it was announced that the group company Smoltek Semi placed an order for a specially designed machine for future industrial manufacturing of carbon nanofibers to the company's ultra-thin CNF-MIM capacitors. The machine, which will be installed at a semiconductor foundry, constitutes a central part of the production process that Smoltek is now establishing to be able to manufacture the company's ultra-thin capacitors.



## SHARE AND SHARE CAPITAL

As of December 31, 2021, the share capital of Smoltek Nanotech Holding AB amounted to 1,105,856.30 SEK, distributed on 9,282,895 shares. All shares are of the same type. The company's share is traded on Spotlight Stock Market with the ticker symbol SMOL. As of December 31, 2021, the number of shareholders in the company was approximately 2,000. The ten largest shareholders owned shares corresponding to 48.934% of the capital and votes.

#### Incentive program

At the extraordinary general meeting on 2021-12-20, it was decided to issue a maximum of 50,000 warrants to CEO Håkan Persson and 40,000 warrants to chairman of the board Peter Augustsson. The warrants were fully exercised. The options have a term of three years, and the exercise price is SEK 47.83 per share.

At the 2021-05-27 annual general meeting, it was decided to issue a maximum of 123,000 warrants with the right for certain board members and certain key persons in the company to subscribe. 79,100 of these were used. The options have a term of three years, and the exercise price is SEK 70 per share. Furthermore, it was decided to give employees, both current and future, based on predetermined categories, the right to acquire a maximum of 52,000 warrants from the company. The warrants must be transferred on market terms at a premium determined based on a calculated market value per the day of each transfer.

At the Annual General Meeting 2020-06-09, it was decided to issue a maximum of 48,000 warrants with the right for key employees in the company to subscribe. 8,640 of these were exercised. The warrants have a maturity of 3 years and the exercise price is 115 SEK.

At the Annual General Meeting 2019-05-16, it was decided to issue a maximum of 109,300 warrants with the right for newly elected board member Gustav Brismark and key employees in the company to subscribe. 81.304 of these were exercised. The warrants have a maturity of 3 years and the exercise price is 120 SEK.

At the Annual General Meeting 2018-05-24, it was decided to issue 81,760 warrants with the right for the Chairman of the Board Peter Augustsson to subscribe. The warrants have a maturity of 3 years and the exercise price is 50.90 SEK.

#### Top ten share owners\*

Shareholders	Number of shares	Votes and capital (%)
Gramtec Business Partner AB	1,790,072	19.28%
Peter Enoksson	1,109,030	11.95%
Avanza Pension	420,982	4.54%
Kaj Holmberg	418,059	4.5%
Sindre AB	207,110	2.23%
Nordnet Pensionförsäkring AB	213,981	2.31%
Cornell Reed AB	100,500	1.08%
Liwe Fastighets AB	97,110	1.05%
Ken Michael Bäckström	94,000	1.01%
Tiverman Adventure AB	90,654	0.98%
Other	4,741,397	51.07%
Total	9,282,895	100.0%

\*Information from Euroclear.

## APPROPRIATION OF RETAINED EARNINGS AND SHARE PRICE

## Proposed appropriation of retained earnings

Retained earnings at the disposal of the Annual General Meeting:

	161,974,721
Profit/loss for the year	-49,697,059
Share premium reserve	201,318,817
Retained earnings	10,352,962

#### Share price development in 2021

Smoltek's share is traded on the Spotlight Stock Market in Stockholm and is listed under the short name SMOL. The share price decreased 2021. From the beginning of the year until the end of December, the price went down 39.31%. From when the share was listed on February 26, 2018, up to and including December 31, 2021, the share prices has increased with +60.26%. 2021.



Share price development for the Smoltek share in 2021 in SEK. Source: avanza.se

### OUTLOOK

Smoltek enters 2022 with a continued positive view of our business opportunities despite the uncertain global economic situation, related to various countries' restrictions due to the spread of the coronavirus as well as the increased global geopolitical unrest. The company continues to have a strong nancial position, which reduces its exposure to these uncertainty factors.

In the interactions with potential customers and partners for Smoltek's pioneering CNF-MIM technology, for the manufacture of ultra-thin capacitors, the development work has accelerated during 2021. During the year, Smoltek has worked on the concept phase for how mass production of the company's discrete CNF-MIM capacitors will take place with contract manufacturers (foundry) in terms of variables such as price, performance and yield. In late autumn, this concept phase has transitioned into a design phase, where the company works together with contract manufacturer to design the components to be manufactured. This design phase constitutes phase three of five before mass production can begin. This, together with the initiated industrialization of the CNF-MIM technology, where Smoltek creates a production platform to be able to manufacture several capacitor products, is a clear reason to why the company continues to have a bright outlook on its semiconductor business area.

"We have taken great steps forward in 2021 when it comes to the further development and industrialization of our CNF-MIM capacitors. Among other things, I feel much more confident regarding the status of the procurement of the industrial carbon fiber machine required to be able to start mass production of several capacitor types. Initially, however, we focus on developing a production process for discrete CNF-MIM capacitors for mobile application processors, which is a niche that basically all major players are interested in," says Ola Tiverman, CEO of Smoltek Semi. Regarding the development work with the company's unique high-performing cell material for electrolyzers, within the energy conversion/ hydrogen business area, the company has in 2021 published a whitepaper regarding the technology, achieved experimental evidence (proof-of-concept) and started a development collaboration with a large-scale manufacturer of input materials for electrolyzer cells, and the aim is to be able to start manufacturing small-scale prototypes of electrolyzers in 2023, or earlier.

"During the end of 2021, preparatory steps were initiated in a development collaboration with a large industrial manufacturer of input materials for electrolyzers. However, some delays have occurred, which means that we have not yet been able to sign an agreement regarding and start the main part of this project," says Ellinor Ehrnberg, CEO of Smoltek Innovation.

The ambition is that Smoltek in 2022 will have reached such technical progress that it is interesting for a manufacturer of electrolyzers to build a prototype with the company.

The company has continued to strengthen and broaden the organization to ensure the important work of building relationships and deepening interactions with leading industrial entitites within the company's business areas and technology platform development. Among other things, the subsidiary Smoltek Innovation has also initiated work to broaden the company's commercial opportunities to nearby market segments such as energy storage.

The work to develop and broaden the patent portfolio continues as an important part of Smoltek's value-creating strategy. It currently consists of around 110 patent assets within 20 patent families, of which 71 patents have been granted.

## **RISKS AND UNCERTAINTIES**

#### Limited resources

Smoltek is a small company with limited resources in terms of management, administration and capital. For the implementation of the company strategy, it is important that the resources are allocated in an optimal way for the company. There is a risk that the company's resources are insufficient and that the company is thus affected by financial and operational problems.

#### Key individuals and employees

Smoltek's success is dependent on the knowledge, experience and creativity of a few people. The company is dependent on maintaining personnel and being able to expand with more qualified employees in the future. The company strives to continuously develop both organization and employees.

## Earnings potential and the company's need for capital

It cannot be ruled out that it will take longer than expected before the company reaches a positive cash flow. Nor can it be ruled out that the company may in the future raise new external capital. There is no guarantee that in this case it can be obtained on favourable terms for the company shareholders. A failure to generate sufficient profits can affect the company's market value.

#### Sales risk

It is not possible to state with certainty that the company's technology receives the positive reception in the market that the company hopes and believes in. The company believes that a prerequisite for entering into license agreements is that attractive performance can be verified even for relevant secondary properties. Closing license agreements can take a considerable amount of time and there is usually a delay in related royalty income. License revenue may be lower than what the company at present has reason to believe. Likewise, the company assesses that income from future production of individual components may be lower than initially calculated.

#### Industrialization process

Industrialization of the CNF-MIM technology for production of ultra-thin capacitors may take longer than the company estimates. The primary ambition is to establish an infrastructure for production of the company's ultra-thin CNF-MIM capacitors in very high volumes. In this work, Smoltek is directly dependent on collaborations with the contract manufacturers (foundries) to scale up the CNF-MIM technology. The production processes used in the CNF-MIM technology are all very advanced processes normally used in advanced semiconductor manufacturing, and Smoltek additionally adds a unique machine and associated process for growing carbon nanobers. The industrialization work is therefore characterized by a high technical complexity and involves many suppliers within different parts of the semiconductor manufacturing ecosystem. The technical risks in the work of scaling up the CNF-MIM technology can primarily be related to producibility, production yield, quality, as well as electrical and mechanical performance of the capacitors intended to manufacture in high volume. Smoltek also sees a risk for extended lead times and increasing development costs as a consequence of a globally strained semiconductor industry.

#### Other external factors

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The effects on the global economy following in the wake of the Covid-19 pandemic are still affect-ing lead times for production chains in, among other things, advanced technology development worldwide. Likewise, uncertainties in the geopolitical world situation have increased during the spring. Both of these effects risk entailing more protracted processes for the company's business, as they mostly consist of dialogues with international companies, most of which are based in Eu-rope, Asia and the USA. The increasingly uncertain geopolitical situation, especially in Europe, can also affect lead times for input materials and production development.

## **KEY RATIOS**

Multi-year overview (TSEK) The Group	2021	2020	2019
Net sales	1,360	2,573	506
Equity/assets ratio*	94.8%	96.4%	92.6%
Cash and cash equivalents	71,586	87,683	24,642
Total assets	143,533	144,039	68,540
Profit/loss after financial items	-24,744	-13,561	-12,565
Profit/loss per share	-3.01 SEK	-1.99 MSEK	-2.06 SEK
Profit/loss per share, diluted	-2.90 SEK	-1.64 SEK	-1.95 SEK
Parent company			
Net sales	5,017	2,951	2,500
Equity/assets ratio*	94.3%	99.0%	98.9%
Cash and cash equivalents	60,641	82,238	22,725
Total assets	172,895	192,910	95,942
Profit/loss after financial items	-49,697	-2,473	-828
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\* Adjusted equity / total assets



## **CHANGES IN EQUITY**

The Group (SEK)	Share capital	Other paid in capital	Other equity incl. profit/loss for the period	Total equity
Opening balance 2021-01-01	966,705	170,060,245	-32,154,317	138,872,734
Issuance of shares (Exercising warrants TO 2)		-40,796		-40,796
Issuance of shares (Exercising warrants Smoltek AB)		1,325,363		1,325,363
Issuance of shares (Directed issue TO 4)	139,151	20,448,555		20,587,706
Profit/loss for the period			-24,744,345	-24,744,345
Closing balance 2021-12-31	1,105,856	191,793,367	-56,898,662	136,000,561

Parent company	Share capital	Not registred share capital	Premium reserve unrestricted equity	Other unrestricted equity
Opening balance 2021-01-01	966,705		179,585,698	10,352,960
Issue of shares (Exercising warrants TO 2)			-40,796	
Registered share capital from non-cash issue / Share premium fund			1,325,363	
Issue of shares (Directed issue TO 4)	139,151		20,448,555	
Profit/loss for the period				-49,697,059
Closing balance 2021-12-31	1,105,856	-	201,318,820	-39,344,099

## **CONSOLIDATED INCOME STATEMENT**

Smoltek Nanotech Holding AB including subsidiaries

(SEK)	Note	2021	2020
Net sales		1,359,728	2,572,132
Received grant		109,957	152,775
Activated own-account work	9	4,496,956	4,334,570
Other external costs		118,175	61,323
		6,084,816	7,121,801
Operating costs			
Other external costs		-13,085,371	-7,538,449
Personnel costs	3.4	-17,972,000	-13,129,592
Operating profit/loss		-24,972,555	-13,546,240
Profit/loss from financial items			
Sale of securities		239,079	0
Interest costs		-10,869	-14,349
Profit/loss before tax		-24,744,345	-13,560,589
Tax on profit/loss for the period	5	-	-
Profit/loss for the period		-24,744,345	-13,560,589

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## **CONSOLIDATED BALANCE SHEET - ASSETS**

Smoltek Nanotech Holding AB including subsidiaries

Assets (SEK)	Note	2021-12-31	2020-12-31
Assets			
Fixed assets			
Intangible fixed assets			
Balanced expenses for development work	9	63,498,359	51,120,465
Tangible fixed assets			
Advance payments for tangible fixed assets	10	4,583,662	2,520,250
Total fixed assets		68,028,021	53,640,715
Current assets			
Current receivable			
Tax receivable		160,092	931,847
Accounts receivable		202,761	12,780
Other current receivable		2,161,215	742,901
Prepaid costs and accrued income		1,340,923	1,028,819
		3,864,991	2,715,498
Cash and bank		31,346,670	87,683,412
Other current investments		40,239,734	-
Total current assets		75,451,395	90,398,911
Total assets		143,533,416	144,039,626

## CONSOLIDATED BALANCE SHEET -EQUITY AND LIABILITIES

Smoltek Nanotech Holding AB incl. subsidiaries

Equity and liabilities (SEK)	Note	2021-12-31	2020-12-31
Equity			
Share capital		1,105,856	966,706
Other paid in capital		191,793,367	170,060,245
Other equity incl. profit/loss for the period		-56,898,662	-32,154,217
Total equity		136,000,561	138,872,734
Long-term liabilities			
Liabilities to credit institutions	11	757,890	819,202
Total long-term liabilities		757,890	819,202
Current liabilities			
Trade liabilities		1,891,876	1,056,677
Other liabilities		599,493	400,188
Accrued costs and prepaid income	12	4,283,654	2,890,825
Total current liabilities		6,775,023	4,347,690
Total equity and liabilities		143,533,416	144,039,626

### **CONSOLIDATED CASH FLOW STATEMENT**

Smoltek Nanotech Holding AB incl. subsidiaries

Operating activities (TSEK)	2021	2020
Operating profit/loss	-24,973	-13,546
Interest payments	-10	0
Cash flow from operating activities before changes in working capital	-24,983	-13,546
Changes in working capital		
Changes in receivables	-1,150	-894
Changes in current liabilities	2,428	92
Cash flow from operating activities	-23,705	-14,347
Investment activities		
Intangible fixed assets	-11,868	-10,053
Tangible fixed assets	- 2,573	-1,512
Current Investments	-60,000	
Sales of current investments	19,999	
Cash flow from investment activities	-54,442	-11,565
Financing activities		
Issuance of shares	21,913	88,953
Issue of shares (Exercising warrants TO 2)	-41	
Changes in long-term liabilities	-61	-
Cash flow from financing activities	21,811	88,953
Cash flow	-56,336	63,041
Cash opening balance	87,683	24,642
Cash closing balance	31,347	87,683

### PARENT COMPANY INCOME STATEMENT

#### Smoltek Nanotech Holding AB

(SEK)	Note	2021	2020
Net sales		5,016,870	2,950,979
Other operating income		718,535	0
		5,735,405	2,950,979
Operating costs			
Other external costs		-6,777,098	-2,301,372
Personnel costs	3,4	-10,081,400	-3,999,466
Operating profit/loss		-11,123,094	-3,349,858
Profit/loss from financial items			
Sales of securities		239,079	
Interest income	6	1,189,220	877,397
Write-down of units	8	-40,000,000	
Interest costs		-2,263	-116
Profit/loss before tax		-49,697,059	-2,472,577
Tax on profit/loss for the period		-	-
Profit/loss for the period		-49,697,059	-2,472,577

## **PARENT COMPANY BALANCE SHEET - ASSETS**

Smoltek Nanotech Holding AB

(SEK)	Note	2021-12-31	2020-12-31
Assets			
Fixed assets			
Financial fixed assets			
Shares in Group companies	7	80,313,830	62,313,830
Receivables at Group companies		30,114,338	46,925,118
Total fixed assets		110,428,168	109,238,948
Current assets			
Current receivables			
Current receivables from Group companies		907,992	820,047
Tax receivable		120,163	276,471
Prepaid costs and accrued income		580,213	321,964
Other current receivables		337,848	15,257
		1,946,216	1,433,739
Cash and bank		20,400,982	82,238,014
Other current investments		40,239,734	
Total current assets		62,586,932	83,671,752
Total assets		173,015,100	192,910,700

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### PARENT COMPANY BALANCE SHEET -EQUITY AND LIABILITIES

Smoltek Nanotech Holding AB

(SEK)	Note	2021-12-31	2020-12-31
Equity and liabilities			
Equity			
Restricted equity			
Share capital		1,105,856	966,706
		1,105,856	966,706
Unrestricted equity			
Premium reserve		201,318,820	179,585,695
Balanced result		10,352,963	12,825,539
Result for the period		-49,697,059	-2,472,577
		161,974,724	189,938,658
Total equity		163,080,580	190,905,363
Current liabilities			
Current receivables from Group companies		7,206,524	
Trade liabilities		584,533	189,547
Other liabilities		536,894	287,855
Accrued costs and prepaid income	12	1,606,571	1,527,935
Total current liabilities		9,934,520	2,005,337
Total equity and liabilities		173,015,100	192,910,700

## PARENT COMPANY CASH FLOW STATEMENT

Smoltek Nanotech Holding AB

(KSEK)	2021	2020
Operating activities		
Operating profit/loss	-11,123	-3,350
Interest payments	-2	0
Cash flow from operating activities before changes in working capital	-11,125	-3,350
Changes in working capital		
Current receivables Group	-881	-820
Changes in receivables	-305	-319
Changes in current liabilities	603	963
Cash flow from operating activities	-11,708	-3,526
Investment activities		
Financial fixed assets	0	-25
Changes in receivables at Group companies	-32,000	-21,620
Current investments	-60,000	0
Sales of current investments	19,999	0
Cash flow from investment activities	-72,001	-21,645
Financing activities		
Issuance of shares	21,913	84,684
Repurchase of warrants	-41	-
Cash flow from financing activities	21,872	84,684
Cash flow	-61,837	59,513
Cash opening balance	82,238	22,725
Cash closing balance	20,401	82,238

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Smoltek Nanotech Holding AB

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